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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/668,359 | 09/24/2003 | Hiroshi Miura | 103213-00057 | 4693 |

7590 11/08/2005

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| EXAMINER |
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SORRELL, ERON J

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| ART UNIT | PAPER NUMBER |
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2182

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,359

Applicant(s)

MIURA ET AL.

Examiner

Eron J. Sorrell

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 3, 5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/22/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 2,3,5, and 6 in the reply filed on 8/30/05 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Seshan et al. (U.S. Patent No. 6,311,234 hereinafter "Seshan").

4. Referring to claim 2 and 5, Seshan teaches a data processing apparatus (see item 42 in figure 1A) comprising a CPU (see item 10 in figure 1A) and a memory (see item 23 in figure 1A) for storing data or for storing data and the program, wherein the data can be read out from the memory through a DMA controller (see item 61 in figure 1), the DMA controller comprising:

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a setting register for permitting a CPU to make settings for DMA transfer therein (see lines 16-23 of column 11);

an operation register for permitting data stored in the setting register to be written thereto, or an operation counter for performing counting operation by use of the data (see figure 8 and lines 27-32 of column 12, note Seshan teaches at least a counter);

an operation controller for performing control so that, when DMA transfer is started, the data stored in the setting register is written to the operation register or the operation counter (see lines 16-23 of column 11); and

a transfer executer for executing DMA transfer based on the data stored in the operation register or the operation counter (see lines 42-57 of column 6).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seshan in view of Sato et al. (U.S. Patent No. 5,640,598 hereinafter "Sato") and further in view of Hoshino (JP 02195464 A).

7. Referring to claims 3 and 6, Seshan teaches a data processing apparatus (see item 42 in figure 1A) comprising a CPU (see item 10 in figure 1A) and a memory (see item 23 in figure 1A) for storing data or for storing data and the program, wherein the data can be read out from the memory through a DMA controller (see item 61 in figure 1), the DMA controller comprising:

- an operation register for storing transfer conditions under which DMA transfer is currently being executed (see lines 58-67 of column 10);

- a setting register for storing transfer conditions under which DMA transfer is to be executed next time (see lines 16-23 of column 11, note the "reload" register serves this function);

- an operation controller for performing control so that, when DMA transfer is started, the data stored in the setting register is written to the operation register or the operation counter (see lines 16-23 of column 11); and

a transfer executer for executing DMA transfer based on the data stored in the operation register or the operation counter (see lines 42-57 of column 6).

Seshan fails to teach the limitation of a setting execution register for storing transfer conditions under which to transfer, by DMA transfer, transfer conditions for DMA transfer from an external memory to the setting register.

Sato teaches, in an analogous system, the above limitation (see lines 9-27 of column 6).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Seshan with the above teachings of Sato. One of ordinary skill in the art would have been motivated to make such modification in order to store the transfer instructions in advance as suggested by Sato (see lines 9-27 of column 6).

The combination of Seshan and Sato fails to teach the limitations of a selector for alternatively selecting one of the setting register and the setting execution register; a selection controller for performing control so that the register selected by the selector is switched alternately between the setting register and the setting execution register every time DMA transfer ends.

Hoshino teaches, in an analogous system, the above limitation (see abstract).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Seshan and Sato with the above teachings of Hoshino. One of ordinary skill in the art would have been motivated to make such modification in order to omit initialization in each transfer and increase transfer speed by providing the equipment with files for storing various kinds of transfer conditions as suggested by Hoshino (see abstract).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following document is cited to further show the state of the art as it pertains to DMA controllers

US PUB NO. 2005/0160201 to Jeddeloh teaches a DMA controller comprising a setting register, operation counter and transfer controller (see figures 3 and 4).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J. Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 8:00AM - 4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJS
November 2, 2005



**KIM HUYNH
PRIMARY EXAMINER**

11/04/05